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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,040	12/11/2001	Ichio Yudasaka	110554	7811

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EXAMINER
SEFER, AHMED N

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/936,040	Applicant(s) YUDASAKA ET AL.	
	Examiner A. Sefer	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *8-12 and 18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 13-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 1-7, 13-16 and 17) in Paper No. 9 is acknowledged. The traversal on the ground(s) as stated in the election paper was not found persuasive because unpatentability of Group I invention would not necessarily imply unpatentability of Group II invention, since the device of Group I invention could be made by a process materially different from those of Group II invention. Thus, the requirement is still deemed proper and is therefore made **FINAL**.

Drawings

2. Figures 13, 14(A) – (E) and 16(A) – (E) should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The specification is objected to for the following reasons:

A section of page 12 is missing.

The application is informal in the arrangement of the specification. Each of the lettered items should be preceded by the headings listed below.

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if

the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1-5 and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (JP 10-79513).

Suzuki et al disclose in figs. 1-4 a thin film transistor or a display device having thin film transistor (as in claim 17) comprising a gate electrode 6 having a gate insulation film 5; channel regions that extend through the gate insulation film in the gate electrode; and a source drain regions 4 connected to said channel regions that are formed against a semiconductor film that is formed on the surface of an insulation substrate, wherein recombination centers 7, 8 which capture carriers are formed in said channel regions by part of crystal semiconductor film having a relatively low degree of crystallization among crystal semiconductor films that form said channel regions.

As to claims 2-5 and 13-16, Suzuki et al disclose recombination centers concentrated adjacent to said drain regions within said channel regions or concentrated in a region, among channel regions, whose distance from the drain regions falls within 1/3 to 1/10 of a channel length (as in claim 3) wherein regions, among channel regions, in which said recombination centers are concentrated have different thickness (as in claims 4, 13 and 14) or surface positions (as in claims 5, 15 and 16) compared to other regions.

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Deane et al. US Patent No. 6,064,091.

Deane et al disclose in figs. 5 and 6 a thin film transistor or a display device having thin film transistor (as in claim 17) comprising a gate electrode 25 having a gate insulation film 24; channel regions that extend through the gate insulation film in the gate electrode; and a source drain regions 14, 16 connected to said channel regions that are formed against a semiconductor film that is formed on the surface of an insulation substrate, wherein recombination centers 22 which capture carriers are formed in said channel regions by part of crystal semiconductor film having a relatively low degree of crystallization among crystal semiconductor films that form said channel regions.

7. Claims 1-7 and 13-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakaoka et al. US Patent No. 6,337,500.

Nakaoka et al disclose in figs. 1 and 2 a thin film transistor or a display device

having thin film transistor (as in claim 17) comprising a gate electrode 207 having a gate insulation film 205; channel regions that extend through the gate insulation film in the gate electrode; and a source drain regions 209, 210 connected to said channel regions that are formed against a semiconductor film that is formed on the surface of an insulation substrate, wherein recombination centers 215 which capture carriers are formed in said channel regions by part of crystal semiconductor film having a relatively low degree of crystallization among crystal semiconductor films that form said channel regions.

As to claims 2-5 and 13-16, Nakaoka et al disclose recombination centers concentrated adjacent to said drain regions within said channel regions or concentrated in a region, among channel regions, whose distance from the drain regions falls within 1/3 to 1/10 a channel length (as in claim 3) wherein regions, among channel regions, in which said recombination centers are concentrated have different thickness (as in claims 4, 13 and 14) or surface positions (as in claims 5, 15 and 16) compared to other regions.

As to claims 6 and 7, Nakaoka et al disclose in fig. 7 regions among said channel regions in which said recombination centers are concentrated have different surface height positions compared to other regions due to a different thickness or due to indented sections 415 (as in claim 7) in a lower layer of the semiconductor films forming said channel regions.

8. Claims 1-5 and 13-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghoshal US Patent No. 6,034,408.

Ghoshal discloses in fig. 3 a thin film transistor comprising a gate electrode 74 having a gate insulation film 72; channel regions that extend through the gate insulation film in the gate electrode; and a source drain regions 34, 32 connected to said channel regions that are formed against a semiconductor film that is formed on the surface of an insulation substrate, wherein recombination centers 36 which capture carriers are formed in said channel regions by part of crystal semiconductor film having a relatively low degree of crystallization among crystal semiconductor films that form said channel regions.

As to claims 2-5 and 13-16, Ghoshal discloses recombination centers concentrated adjacent to said drain regions within said channel regions or concentrated in a region, among channel regions, whose distance from the drain regions falls within 1/3 to 1/10 a channel length (as in claim 3) wherein regions, among channel regions, in which said recombination centers are concentrated have different thickness (as in claims 4, 13 and 14) or surface positions (as in claims 5, 15 and 16) compared to other regions.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vu et al. US ref. disclose a semiconductor device with recombination centers near a junction of a device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS
August 2, 2002

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800